Computer Supported Preventive Services for Children: The C.H.I.P. Project

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Despite the acknowledged importance of preventive services for children [1], significant deficiencies in well child care are well documented. Immunization rates are complete in only two thirds of 2 year olds [2] Vision screening for amblyopia is rarely done before age 5 when irreversible loss of vision has already occurred [3, 4] Lead screening is rarely completed according to recommended guidelines, and anticipatory guidance to parents receives only a few seconds in the typical well child visit[5].

Deficiencies in the provision of preventive services seems to arise from missed opportunities to provide care [6]. The data necessary to determine the child's need for services may not be available at the time of an acute visit. When these data are available, a busy clinical practice affords very little time to provide recommended services [5], and the number of guidelines can far exceed the time available [7]. Because preventive services are not prioritized, important preventive services may be supplanted by less important but more salient issues.

To address deficiencies in immunization rates and other preventive services, we developed a computer system to support preventive services for children while streamlining routine clinical practice. The Child Health Improvement Program (CHIP) consists of a patient database coupled with a database of preventive services The patient database serves as an on-line medical record while the preventive services database contains physician prompts derived from AAP, CDC, and US Preventive Services Task Force guidelines. Guidelines are formulated in an algorithmic format [8] and prioritized by estimated cost-utility [9].

When a patient visits the clinic, CHIP compares the patient and preventive services databases to generate a prioritized list of services which are printed as prompts on a provider worksheet. The provider uses the worksheet as the clinic record. Data collected and services provided are documented using check boxes on the worksheet which is fed into a document scanner. The scanner reads the checks and updates the patient database. CHIP uses these data to generate a newsletter for parents that summarizes the visit and provides education material, tailored to the individual, reinforcing physician counseling.

In a pilot survey of users, ninety percent reported a favorable impression of the worksheets:. The majority reported more efficient and complete visits, and faster and more thorough documentation. CHIP is a mechanism for disseminating preventive services guidelines that is acceptable and useful to physicians.

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